HEWLETT PACKARD

Installation and Reference

HP J4090A

HP ProCurve 10Base-T Hub 8

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Applicable Product
HP J4090A ProCurve 10Base-T Hub 8

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Warranty
See the warranty booklet included with the product.
A copy of the specific warranty terms applicable to your Hewlett-Packard product and replacement parts can be obtained from your HP sales and service office or HP authorized reseller.

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Roseville, California 95747-5552
http://www.hp.com/go/procurve

Package Contents

Carefully unpack the contents of the package and verify them against the checklist given below.

Package Checklist

- ☑ HP ProCurve 10Base-T Hub 8 (Part No. HP J4090A)
- ☑ Your hub is shipped with one of these AC power adapters:

Australia/New Zealand/Argentina	(9100-5509)
Europe/Russia/Switzerland/Denmark	(9100-5511)
China	(0950-2807)
Japan	(9100-5508)
United Kingdom/Hong Kong	(9100-5510)
U.S./Canada/Mexico/Taiwan/Brazil/Columbia	(9100-5507)

- ☑ Four rubber foot pads
- ☑ Installation and Reference Guide (J4090-90001)
- ☑ Warranty booklet

Please inform your dealer immediately should there be any wrong, missing, or damaged parts.

If possible, retain the carton, including the original packing materials. Use them again to repack the unit in case there is a need to return it for repair.

Quick Installation

The HP J4090A ProCurve 10Base-T Hub 8 contains 8 10Base-T Ethernet ports. The smart design built into the front display panel provides a friendly interface that simplifies installation and network troubleshooting. If you are already familiar with basic network operations, you should be able to install this hub as described below:

1. Unpack the HP ProCurve 10Base-T Hub 8.
2. Find a location close to the network devices you need to connect, and within easy reach of an electrical outlet.
3. Attach the rubber foot pads and then place the hub on a desktop or any other flat surface. If you are installing multiple hubs, you can stack them on top of each other. A mounting kit (5183-7210) is also available for mounting the hub in a variety of locations including in a rack, on a wall, and under a horizontal surface.
4. Connect any devices that use a standard network interface to the RJ-45 ports on the hub. Use 100Ω Category 3 or 5 STP or UTP cable to connect to the hub, and be sure the length of any twisted-pair connection does not exceed 100 meters.

   This hub can serve as a standalone repeater for small networks, can be cascaded with compatible devices (e.g., Ethernet hub or switch), or can be connected to a network interconnection device (e.g., Ethernet bridge or router). Refer to Chapter 3 for sample configurations:

   - To connect end node devices (e.g., a workstation, server, bridge or router) to the MDI-X ports, use straight-through twisted-pair cable. Refer to Figure 3-1.
   - To cascade to another hub or switch, run straight-through twisted-pair cable from the (8MDI) cascade port on this hub to any (MDI-X) port on the other device. Refer to Figure 3.2.

- If necessary, you can also cascade between two ports of the same type (MDI-X to MDI-X, or MDI to MDI) using a crossover cable. However, be sure not to exceed the maximum length between end nodes as described in Chapter 2.

5. Verify network communications by ensuring that:
   - you have made all the necessary connections
   - you can access any connected resources
   - the hub's link status indicators show that each port in use is connected properly

If you encounter any problems in installing the HP ProCurve 10Base-T Hub 8, refer to Chapter 2 for a detailed description of installation procedures, Chapter 3 for sample configurations, or Appendix A for help in troubleshooting.

About this Guide

This guide is designed for the experienced network installer. It describes how to install and operate the HP ProCurve 10Base-T Hub 8.

This manual covers the following topics:

Chapter 1 - **Product Overview**
Brief description of this hub and a summary of its important features and specifications.

Chapter 2 - **Installing the System**
Installing the HP ProCurve 10Base-T Hub 8 and making basic network connections.

Chapter 3 - **Configuring the Network**
Sample network configurations for a local area network.

Chapter 4 - **Hardware Reference**
Detailed description of the indicator panel and ports.

Appendices-
Troubleshooting, cable assignments, and product specifications.

Contents

Chapter 1: Product Overview

The HP J4090A ProCurve10Base-T Hub 8 is an 8-port repeater. With this type of hub, you can connect computers and other devices together in a twisted-pair cable network. This hub is compliant with the IEEE 802.3 10Base-T standard and supports both 802.3 and Ethernet networks.

Basic Features

- Transmits data at 10 Mbits/s
- Conforms to the IEEE 802.3 repeater specification for 10Base-T
- Provides 8 RJ-45 10Base-T ports (using MDI-X wiring)
- Port 8 can serve as an MDI-X port (for connection to network devices such as workstations or servers) or as an MDI cascade port (for connection to network devices such as hubs or switches), eliminating the need for crossover cables
- Supports 100Ω Category 3 or 5 shielded or unshielded cable (STP or UTP)
- Friendly design that monitors network utilization, collisions, link and port partition status
- LED indicator panel includes Utilization rate indicators and Collision indicator for reporting hub activity and facilitating problem diagnosis
- Provides plug-and-play operation

The HP ProCurve 10Base-T Hub 8 also supports basic system safeguards, including automatic partitioning and reconnection, jabber lockup protection, and automatic polarity detection for network cabling.

- With automatic partitioning and reconnection, any port is automatically isolated if excessive collisions occur on it. When the condition is corrected, the port is automatically reconnected.
- With the jabber lock-up function, the hub automatically stops transmission of abnormal Ethernet frames that may cause data loss for all network users. (Jabber refers to abnormal Ethernet frames which are too long and may come from a malfunctioning Ethernet card.)
- With automatic polarity detection, the hub recognizes and adjusts for attached cable assemblies which may be wired with incorrect polarity on the receive pair.

Chapter 2: Installing the System

This chapter provides information on installing the HP ProCurve 10Base-T Hub 8, establishing network connections, and configuring the system. You may install this hub on any level surface (e.g., a table or shelf). A mounting kit (5183-7210) is also available that provides a variety of mounting options including in a rack, on a wall, or under a horizontal surface.

Please take note of the following minimum site requirements before you begin.

Pre-Installation Requirements

Before you start actual hardware installation, make sure you can provide the right operating environment, including power requirements, sufficient physical space, and proximity to other network devices that are to be connected. Verify the following installation requirements:

- Power source: One of the following external power adapters.

Country	Adapter P/N	Input Specs.*	Output Specs.*
Australia (and others)	9100-5509	220-240 Vac, 50 Hz	8 Vac, 1000 mA
Europe (and others)	9100-5511	230 Vac, 50 Hz	8 Vac, 1000 mA
China	0950-2807	220-240 Vac, 50 Hz	8 Vac, 1000 mA
Japan	9100-5508	100 Vac, 50/60 Hz	8 Vac, 1.0 A
UK (and others)	9100-5510	220-240 Vac, 50 Hz	9 Vac, 1000 mA
USA (and others)	9100-5507	110-127 Vac, 60 Hz	8 Vac, 1000 mA

* Specifications shown on adapter label.

- The hub should be located in a cool dry place where the hub vent holes are not blocked.
- Place the hub out of direct sunlight, and away from heat sources or areas with a high amount of electromagnetic interference.

- Check if network cables and connectors needed for installation are available.
- Find a suitable location at the center of the devices you want to connect, and near a power outlet.

Connecting the Hub System

The HP ProCurve 10Base-T Hub 8 has 8 RJ-45 ports and 1 RJ-45 cascade port. The ports allow you to make connections to devices such as a workstation or server. You can also cascade to another compatible hub or switch by connecting an MDI port on one device (e.g., port 8MDI on this hub) to an MDI-X port on the other device. Or you can cascade from an MDI port on another device to any MDI-X port on this hub. See Figure 4.1.

Making a Connection via an MDI-X Port

You can connect an RJ-45 port on the hub to any device that uses a standard network interface such as a workstation or server, or also to a network interconnection device such as a bridge or router (depending on the port type implemented).

1. Prepare the devices you wish to network. Make sure you have installed suitable 10Base-T network interface cards for making a connection to any of the hub's ports. You also need to prepare straight-through shielded or unshielded twisted-pair cables with RJ-45 plugs at both ends. Use 100Ω Category 3 or 5 cable for all connections.
2. Connect one end of the cable to the RJ-45 port of the network interface card, and the other end to any available (MDI-X) port on the hub. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated. Using the hub in a standalone configuration, you can network up to 8 nodes.

Caution: Do not plug a phone jack connector into the RJ-45 port. This may damage the hub. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

Notes: 1. When connecting to port 8MDI-X, do not use port 8MDI.
2. Make sure each twisted-pair cable does not exceed 100 meters.

Making a Connection via the MDI Cascade Port

1. To make a direct connection to another compatible hub or switch, use the 8MDI cascade port. When connecting to this port, remember not to use port 8MDI-X.
2. Prepare straight-through shielded or unshielded twisted-pair cables with RJ-45 plugs at both ends. Use 100Ω Category 3 or 5 cable for all connections. Connect one end of the cable to Port 8MDI on this hub, and the other end to a standard MDI-X port on the other device. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

Notes: 1. When connecting to Port 8MDI, do not use Port 8MDI-X.
2. Make sure the length of twisted-pair cable does not exceed 100 meters.
3. To connect to another hub or switch, you may also run straight-through twisted-pair cabling from an MDI-X port on this hub to a cascade port on another device. However, if you must connect to another hub or switch via similar port types at both ends of the cable, use crossover cabling.

Distance Limit for 10Base-T Cabling

The maximum distance from a 10Base-T hub to another 10Base-T hub, or to an end-node is 100 meters.

Providing Power to the Hub

1. Plug the AC adapter's power cord into the hub's power connector.
2. Plug the AC adapter into an AC power source. When installing the HP ProCurve 10Base-T Hub 8, note that the AC outlet must be located near the equipment and should be easily accessible.

Note: The hub does not have a power switch; it is powered on when the power adapter is plugged in.

Caution: Use only the AC power adapter that is supplied with your HP ProCurve 10Base-T Hub 8. Using other adapters, including those meant for other HP network products, may result in damage to the equipment. For the correct power adapter to use, see the table on page 2-1.

Verifying Port Status

Check each connection by viewing the port status indicators listed below. (For a more detailed description of these indicators, refer to Chapter 4.)

Link/Activity	Steady green indicates a valid link. Blinking green indicates network activity.
Partition	Indicates that the port has been isolated from the hub when an excessive collision is detected.

If the Link status indicator is not functioning properly, or you experience any other difficulties in setting up the hub, refer to Appendix A.

Verifying System Operation

Verify that all attached devices have a valid connection. The hub monitors link status for each port. If a device is properly connected to the hub and transmitting a link beat signal, the Link indicator lights up for the corresponding port. If the Link indicator fails to light up when you connect a device to the hub, please refer to "System Diagnostics" in Appendix A.

Chapter 3: Configuring the Network

The HP ProCurve 10Base-T Hub 8 allows great flexibility in configuring your network. You can use it in a standalone or multiple hub configuration. Some of the common applications for this Ethernet hub are described in this chapter.

Standalone

This hub can be used in a simple standalone configuration as illustrated below. In compliance with IEEE 802.3 standards, the maximum cable distance between the hub and any workstation is 100 meters for twisted-pair cable.

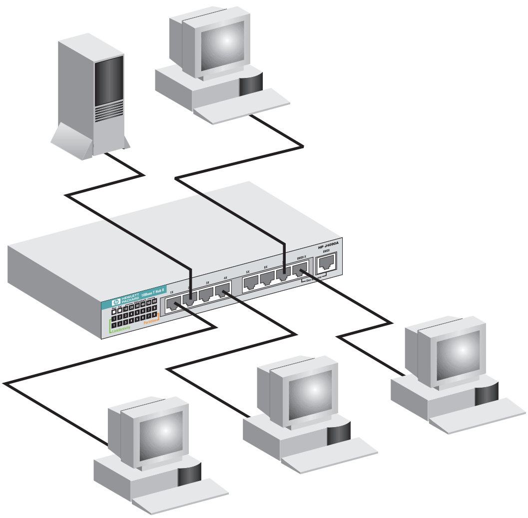


Figure 3.1 Standalone Configuration

Connecting Multiple Hubs

You can easily connect to another hub via the MDI cascade port. Figure 3.2 shows a sample configuration.

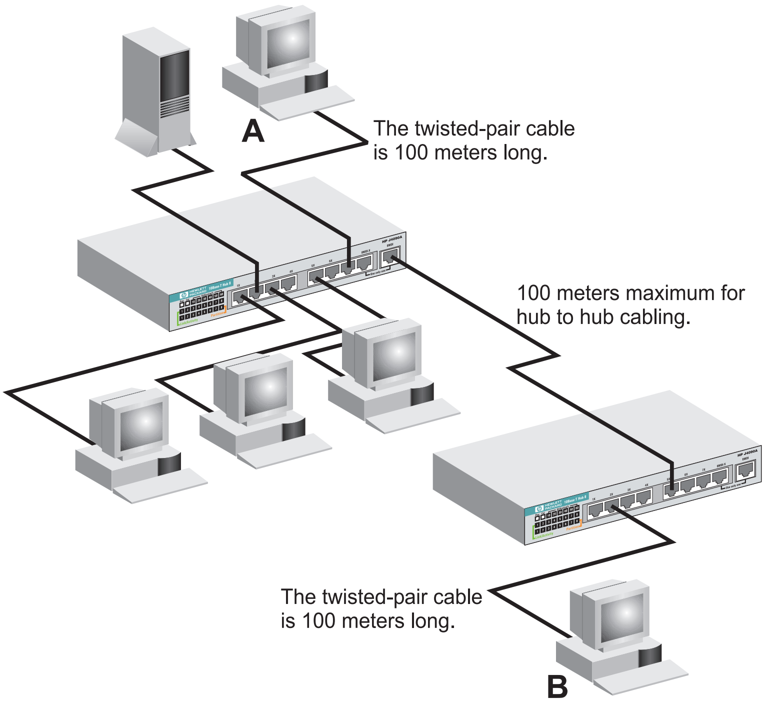


Figure 3.2 Multiple Hub Configuration Using the Cascade Port

Chapter 4: Hardware Reference

Before connecting any network device to this hub, please review Chapter 2 for information on system installation and Chapter 3 for a brief look at common network architectures. This chapter describes the hardware features of the HP ProCurve 10Base-T Hub 8. For easier management and control of the hub, familiarize yourself with the display indicators and ports.

Front Panel

There are 8 RJ-45 MDI-X ports and 1 RJ-45 MDI cascade port on the front panel. Moreover, the system indicators provide a simple interface for monitoring the hub. The front panel includes a power indicator, a statistical display for network traffic, a collision indicator, and port status indicators as shown below.

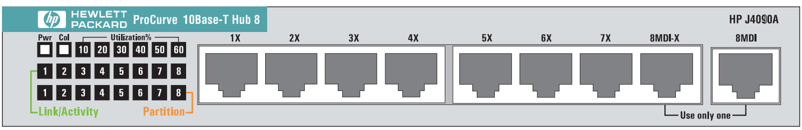


Figure 4.1 Front Panel

The indicator panel simplifies monitoring of various network conditions by providing LEDs that indicate the status of each port and the overall condition of the hub. It provides all the key information required to manage your network on a daily basis. The following pages list the indicators and their functions.

The front panel array provides indicators that show the utilization of network bandwidth and indicate the status of port connections as shown below.

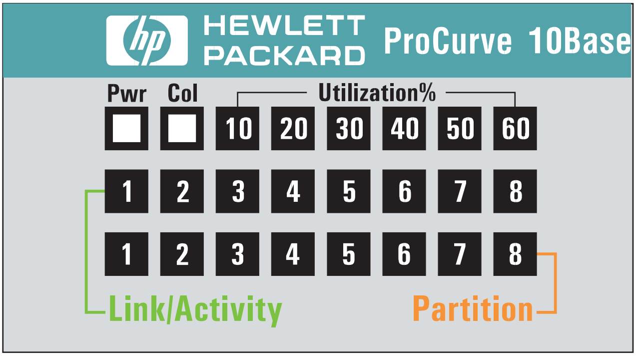


Figure 4.2 Indicators

Pwr

Color: Green

Function: Power indicator

Condition	Indication
ON	Unit is receiving power.
OFF	Power is disconnected, no power received.

Statistical Display for System Performance

Utilization - (Utilization%) The statistical indicators show the percentage of valid data passing through all ports compared to overall network bandwidth (updated every 0.5 seconds). There are 6 LEDs representing the percentage of network utilization. The corresponding LEDs light up to show that the utilization of LAN bandwidth has reached this level. When active, these LEDs behave like a stereo's equalizer display.

For example, if network utilization reaches 10%, the LED labeled 10% will light up. However, if network utilization rises above 10% (e.g., 30%), the LED labeled 30 and all the other LEDs before it (i.e., 10 and 20) will also light up in rapid succession. These indicators monitor the share of valid network frames handled by the hub within a 10 Mbit/s bandwidth. They provide a quick way to monitor the current traffic load relative to the network's capacity.

Col

Color: Yellow

Function: Indicates detection of a packet collision.

Condition	Indication
ON/BLINKING	Hub has detected a collision condition on the network.
OFF	No collisions have been detected.

The relative rate of collision is indicated by the level of brightness and blinking of the Col indicator.

Note: If the hub displays a high collision rate, check to see if any of the connected devices are malfunctioning or if a loop has been formed in your network connections. Otherwise, your network may just be overloaded and you may need to reconfigure your network to balance the traffic load.

Port Status Display

Link/Activity

Color: Green

Function: Indicates a successful connection to another hub or end node on this port.

Indicates packets being passed to a port on the hub.

Condition	Indication
ON	Hub detects a connection to another hub or end node on this port.
OFF	Hub does not detect a connection to another hub or end node on this port.
BLINKING	Hub detects packets being passed to this port.

Partition

Color: Yellow

Function: Indicates that a port was disabled because an excessive collision condition has been detected on the port.

Condition	Indication
ON	Hub has disabled the port because of excessive collisions detected at the port.
OFF	Hub port is enabled.

When 64 consecutive collisions occur on the cable connected to a hub port, that port is automatically partitioned by the hub. It is automatically reconnected when a collision-free data packet at least 512 bits long (i.e., a minimum size legal packet) passes through the port.

When partitioning occurs, the port's corresponding Partition LED will be continually lit (yellow light). Otherwise, this LED should be OFF (unlit).

RJ-45 10Base-T Ports

The HP ProCurve 10Base-T Hub 8 includes 8 10Base-T ports on the front panel. Port 8 can also serve as a cascade port. Connect the MDI-X ports to network devices such as workstations or servers, and the MDI port to a network interconnection device such as another hub or switch. Remember that you cannot connect to port 8 MDI-X and Port 8 MDI at the same time.

Note: Use Category 3 or 5 straight-through twisted-pair cable (STP or UTP) for all standard connections. However, if you must cascade between two hubs using similar port types at both ends of the cable, use a crossover cable.

Rear Panel

The rear panel on the hub includes a power connector.

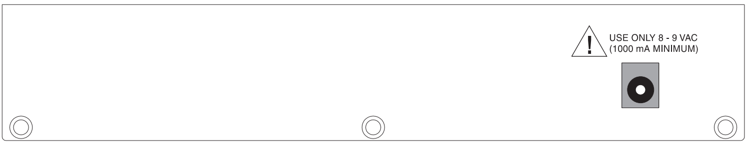


Figure 4.3 Rear Panel

Power Connector

Connect the power adapter supplied with the hub to this power connector.

Caution: Use only the AC power adapter that is supplied with your HP ProCurve 10Base-T Hub 8. Using other power adapters, including those meant for other HP network products, may result in damage to the equipment. For the correct power adapter to use, see the table on page 2-1.

Appendix A: Troubleshooting

Diagnosing Hub Indicators

The HP ProCurve 10Base-T Hub 8 can be easily monitored through its comprehensive panel indicators. This section describes common problems you may encounter and possible solutions.

Problem	Cause	Solution
One of the users on the network cannot communicate with another network device through the hub	Faulty cable, faulty connector, faulty LAN adapter, cable length violation	Several possible solutions are: Find the port that the user is currently connected to. Check that the Link/Activity LED is on. If it is not, remove the cable from the port and connect it to another port. If the LED is still not on, connect it to another port. If the LED is still not on, use the "Test Link" option in the user's LAN Adapter test program to verify the communication path between two PCs (connected to the hub) is working. Connect a different cable from the end user to the hub. Perform a self-test on the LAN adapter in the user's computer and/or the device that cannot be reached. Verify cable lengths do not exceed 100 meters.
I have tried everything, but the hub still does not appear to be working	The hub or power supply may have failed	Try removing the AC adapter and reinserting it to see if the LEDs begin normal operation. Try a different electrical outlet. If the problem persists, return the hub and AC adapter to your HP-authorized dealer or reseller following the instructions in the warranty booklet.
Partition indicator lights up	Hub has partitioned a port	If port partitioning has occurred, the hub will automatically enable the port when the fault condition disappears.

Table A.1 Problems and Solutions

Use the diagnostic procedures described in the following section to verify that all other system components are functioning properly. If you still cannot resolve the problem, contact your HP-authorized dealer or reseller.

System Diagnostics

Installation

Verify that all system components have been properly installed. If one or more components appear to be malfunctioning (e.g., the power adapter or network cabling), test them in an alternate environment where you are sure that all the other components are functioning properly.

Cabling

1. Verify that the cabling type is correct. Use 100Ω Category 3 or 5 cabling. Be sure all cable connectors are securely seated in the required ports.

   For connection from the hub MDI-X ports to end nodes such as PCs, workstations, and printers, and other devices with MDI ports, use straight-through cable.

   When cascading from the hub MDI port to an MDI-X port on another hub or switch, use straight-through cable.

   When cascading two devices using the same type of RJ-45 ports at both ends of the cable (MDI-X to MDI-X, or MDI to MDI), make sure a crossover cable is used. A crossover cable should only be necessary if the cascade port (8MDI) is not available for connection to another hub or switch.

2. See if the twisted-pair cable is functioning properly by using it for another port and attached device that already displays valid indications when connected to the network.

3. Check the length of the twisted-pair connections to be sure they do not exceed 100 meters.

4. Make sure all devices are connected to the network. Equipment may have been unintentionally disconnected from the network.

LAN Adapters

Make sure the network interface hardware and software drivers for the attached devices are functioning properly and are 10Base-T. Check the LAN adapters and associated drivers used in any attached workstation or server. Test the adapter for an attached workstation by trying it in another computer that has been successfully connected to the network.

Physical Configuration

If problems occur after altering the network configuration, restore the original connections, then try to track the problem down by implementing the new changes, one step at a time. Ensure that cable distances and other physical aspects of the installation do not exceed 10Base-T specifications.

Verify that all connected devices are compliant with the 10Base-T standard including transmission of the link beat signal.

Hub Integrity

As a last resort, verify the hub's integrity with a power-on reset. Unplug the power adapter from the hub and plug it back in. Try this power cycling a few times. If the problem still persists and you have completed all the preceding diagnoses, contact your HP-authorized dealer or reseller for further assistance.

Appendix B: Port Assignments

RJ-45 Port

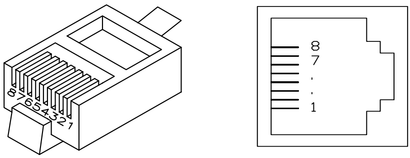
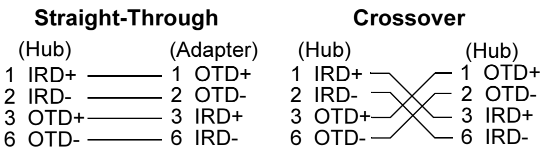


Figure B.1 RJ-45 Connector (on the Hub Side)

Pin	MDI-X Assignment (Port 1-8)	MDI Assignment (Cascade Port 8)
1	Receive Data +	Transmit Data +
2	Receive data -	Transmit Data -
3	Transmit Data +	Receive Data +
6	Transmit Data -	Receive data -
4,5,7,8	Not Used	Not Used

Table B.1 RJ-45 Pin Assignments

Schematics for both straight and crossover twisted-pair cable are shown below.



Appendix C: Specifications

Standards Conformance	IEEE 802.3 10BASE-T
Media Supported	Unshielded or shielded twisted-pair cable (100Ω Category 3 or 5 STP/UTP)
Interfaces	8 RJ-45 MDI-X ports, 1 RJ-45 MDI cascade port
Network Cable Distances	100 meters maximum
Dimensions	19.89 x 12.13 x 4.01 cm (7.83 x 4.78 x 1.57 in)
Weight	0.7 Kg (1.5 lbs)
Power Requirements	8-9 Vac, 50-60 Hz, 1000 mA max.
Temperature	0°C to 55°C/32° to 131°F (Operating) -40°C to 70°C/-40° to 158°F (Non-Operating)
Humidity (Noncondensing)	15% to 95% at 40°C / 104°F (Operating) 15% to 90% at 65°C / 149°F (Non-Operating)
Maximum Altitude	4.6 km / 15,000 ft (Operating) 4.6 km / 15,000 ft (Non-Operating)
Certification	CE Mark
Emissions	FCC Class A, VCCI Class A, CISPR Class A
Safety	IEC 950: (1991)+A1, A2/EN609501(1992)+A1, A2 UL1950 CSA9SO NOM-019-SCFI-1993 TÜV/GS
Acoustic Noise	Geraeuschemission LwA= 50 dB fik tiven Arbeit Splatz nach DIN 4S635T.19

Appendix D: Safety and Regulatory Statements

This chapter covers the following topics:

- mounting precautions
- power precautions
- safety and regulatory statements
- Declaration of Conformity

Mounting Precautions

A mounting kit (5183-7210) is available to allow mounting the HP ProCurve 10Base-T Hub 8 into a standard 19-inch telco rack or equipment cabinet. When you put a hub into a rack, follow these mounting precautions:

- The rack or cabinet should be adequately secured to prevent it from becoming unstable and/or falling over.
- Before mounting a hub, plan its location and orientation relative to other devices and equipment. Also consider the cabling that will be attached to the hub and the ports that will be used. Verify that there is room for the grouped cables to trail out from the side of the hub.
- Do not block airflow around the sides and the back of the unit.
- Do not install the hub in an environment where the operating ambient temperature might exceed 55°C (131°F).

Power Precautions

Follow these precautions when unplugging and plugging in power to the hub.

- **Caution:** Use only the power adapter supplied with your HP ProCurve 10Base-T Hub 8. Using other power adapters, including those meant for other HP network products, may result in damage to the equipment. For the correct power adapter to use, see the table on page 2-1.
- **Note:** The hub does not have a power switch; it is powered on when the power connector is plugged in.
- When installing the hub, note that an AC outlet must be installed near the equipment and should be easily accessible.
- Ensure that the HP ProCurve 10Base-T Hub does not overload the power circuits, wiring, and over-current protection. To determine the possibility of overloading the supply circuits, add together the amperage ratings from the nameplates of all your hubs (and other equipment) installed on the same circuits and compare the total with the rating limits for the supply circuits.
- Make sure that the power source circuits are properly grounded, then use the supplied power adapter to connect the HP ProCurve 10Base-T Hub to the circuit. *See the Safety Statements in this chapter.*

Safety Information



Documentation reference symbol. If the product is marked with this symbol, refer to the product documentation to get more information about the product.

WARNING — A WARNING in the manual denotes a hazard that can cause injury or death.

CAUTION — A CAUTION in the manual denotes a hazard that can damage equipment.

Do not proceed beyond a WARNING or CAUTION notice until you have understood the hazardous conditions and have taken appropriate steps.

Grounding

These are safety class I products and have protective earthing terminals. There must be an uninterruptible safety earth ground from the main power source to the product's input wiring terminals, power cord, or supplied power cord set. Whenever it is likely that the protection has been impaired, disconnect the power cord until the ground has been restored.

For LAN cable grounding:

- If your LAN covers an area served by more than one power distribution system, be sure their safety grounds are securely interconnected.
- LAN cables may occasionally be subject to hazardous transient voltages (such as lightning or disturbances in the electrical utilities power grid). Handle exposed metal components of the network with caution.

Servicing

There are no user-serviceable parts inside these products. Any servicing, adjustment, maintenance, or repair must be performed only by service-trained personnel.

These products do not have a power switch; they are powered on when the power cord is plugged in.

Informations concernant la sécurité

	Symbole de référence à la documentation. Si le produit est marqué de ce symbole, reportez-vous à la documentation du produit afin d'obtenir des informations plus détaillées.
WARNING	Dans la documentation, un WARNING indique un danger susceptible d'entraîner des dommages corporels ou la mort.
CAUTION	Un texte de mise en garde intitulé CAUTION indique un danger susceptible de causer des dommages à l'équipement.
	Ne continuez pas au-delà d'une rubrique WARNING ou CAUTION avant d'avoir bien compris les conditions présentant un danger et pris les mesures appropriées.

Cet appareil est un produit de classe I et possède une borne de mise à la terre. La source d'alimentation principale doit être munie d'une prise de terre de sécurité installée aux bornes du câblage d'entrée, sur le cordon d'alimentation ou le cordon de raccordement fourni avec le produit. Lorsque cette protection semble avoir été endommagée, débrancher le cordon d'alimentation jusqu'à ce que la mise à la terre ait été réparée.

Mise à la terre du câble de réseau local:

- si votre réseau local s'étend sur une zone desservie par plus d'un système de distribution de puissance, assurez-vous que les prises de terre de sécurité soient convenablement interconnectées.
- Les câbles de réseaux locaux peuvent occasionnellement être soumis à des surtensions transitoires dangereuses (telles que la foudre ou des perturbations dans le réseau d'alimentation public). Manipulez les composants métalliques du réseau avec précautions.

Aucune pièce contenue à l'intérieur de ce produit ne peut être réparée par l'utilisateur. Tout dépannage, réglage, entretien ou réparation devra être confié exclusivement à un personnel qualifié.

Cet appareil ne comporte pas de commutateur principal ; la mise sous tension est effectuée par branchement du cordon d'alimentation.

Hinweise zur Sicherheit

	Symbol für Dokumentationsverweis. Wenn das Produkt mit diesem Symbol markiert ist, schlagen Sie bitte in der Produktdokumentation nach, um mehr Informationen über das Produkt zu erhalten.
WARNING	Eine WARNING in der Dokumentation symbolisiert eine Gefahr, die Verletzungen oder sogar Todesfälle verursachen kann.
CAUTION	CAUTION in der Dokumentation symbolisiert eine Gefahr, die dis Gerät beschädigen kann.
	Fahren Sie nach dem Hinweis WARNING oder CAUTION erst fort, nachdem Sie den Gefahrenzustand verstanden und die entsprechenden Maßnahmen ergriffen haben.

Dies ist ein Gerät der Sicherheitsklasse I und verfügt über einen schützenden Erdungsterminal. Der Betrieb des Geräts erfordert eine ununterbrochene Sicherheitserdung von der Hauptstromquelle zu den Geräteingabeterminals, den Netzkabeln oder dem mit Strom belieferten Netzkabelsatz voraus. Sobald Grund zur Annahme besteht, daß der Schutz beeinträchtigt worden ist, das Netzkabel aus der Wandsteckdose herausziehen, bis die Erdung wiederhergestellt ist.

Für LAN-Kabelerdung:

- Wenn Ihr LAN ein Gebiet umfaßt, das von mehr als einem Stromverteilungssystem beliefert wird, müssen Sie sich vergewissern, daß die Sicherheitserdungen fest untereinander verbunden sind.
- LAN-Kabel können gelegentlich gefährlichen Übergangsspannungen ausgesetzt werden (beispielsweise durch Blitz oder Störungen in dem Starkstromnetz des Elektrizitätswerks). Bei der Handhabung exponierter Metallbestandteile des Netzwerkes Vorsicht walten lassen.

Dieses Gerät enthält innen keine durch den Benutzer zu wartenden Teile. Wartungs-, Anpassungs-, Instandhaltungs- oder Reparaturarbeiten dürfen nur von geschultem Bedienungspersonal durchgeführt werden.

Dieses Gerät hat keinen Netzschalter; es wird beim Anschließen des Netzkabels eingeschaltet.

Considerazioni sulla sicurezza

Simbolo di riferimento alla documentazione. Se il prodotto è contrassegnato da questo simbolo, fare riferimento alla documentazione sul prodotto per ulteriori informazioni su di esso.

WARNING La dicitura WARNINGdenota un pericolo che può causare lesioni o morte.

CAUTION La diciturаCAUTION denota un pericolo che può danneggiare le attrezzature.

Non procedere oltre un avviso di WARNING o di CAUTIONprima di aver compreso le condizioni di rischio e aver provveduto alle misure del caso.

Questo prodotto è omologato nella classe di sicurezza I ed ha un terminale protettivo di collegamento a terra. Dev'essere installato un collegamento a terra di sicurezza, non interrompibile che vada dalla fonte d'alimentazione principale ai terminali d'entrata, al cavo d'alimentazione oppure al set cavo d'alimentazione fornito con il prodotto. Ogniqualvolta vi sia probabilità di danneggiamento della protezione, disinserite il cavo d'alimentazione fino a quando il collegaento a terra non sia stato ripristinato.

Per la messa a terra dei cavi LAN:

- se la vostra LAN copre un'area servita da più di un sistema di distribuzione elettrica, accertatevi che i collegamenti a terra di sicurezza siano ben collegati fra loro;
- i cavi LAN possono occasionalmente andare soggetti a pericolose tensioni transitorie (ad esempio, provocate da lampi o disturbi nella griglia d'alimentazione della società elettrica); siate cauti nel toccare parti esposte in metallo della rete.

Nessun componente di questo prodotto può essere riparato dall'utente. Qualsiasi lavoro di riparazione, messa a punto, manutenzione o assistenza va effettuato esclusivamente da personale specializzato.

Questo apparato non possiede un commutatore principale; si mette scotto tensione all'inserirsi il cavo d'alimentazione.

Consideraciones sobre seguridad

Símbolo de referencia a la documentación. Si el producto va marcado con este símbolo, consultar la documentación del producto a fin de obtener mayor información sobre el producto.

WARNING — Una WARNING en la documentación señala un riesgo que podría resultar en lesiones o la muerte.

CAUTION — Una CAUTION en la documentación señala un riesgo que podría resultar en averías al equipo.

No proseguir después de un símbolo de WARNING o CAUTION hasta no haber entendido las condiciones peligrosas y haber tomado las medidas apropiadas.

Este aparato se enmarca dentro de la clase I de seguridad y se encuentra protegido por una borna de puesta a tierra. Es preciso que exista una puesta a tierra continua desde la toma de alimentación eléctrica hasta las bornas de los cables de entrada del aparato, el cable de alimentación o el juego de cable de alimentación suministrado. Si existe la probabilidad de que la protección a tierra haya sufrido desperfectos, desenchufar el cable de alimentación hasta haberse subsanado el problema.

Puesta a tierra del cable de la red local (LAN):

- Si la LAN abarca un área cuyo suministro eléctrico proviene de más de una red de distribución de electricidad, cerciorarse de que las puestas a tierra estén conectadas entre sí de modo seguro.
- Es posible que los cables de la LAN se vean sometidos de vez en cuando a voltajes momentáneos que entrañen peligro (rayos o alteraciones en la red de energía eléctrica). Manejar con precaución los componentes de metal de la LAN que estén al descubierto.

Este aparato no contiene pieza alguna susceptible de reparación por parte del usuario. Todas las reparaciones, ajustes o servicio de mantenimiento debe realizarlos solamente el técnico.

Este producto no tiene interruptor de potencia; se activa cuando se enchufa el cable de alimentación.

Safety Information (Chinese)

HP 网络产品使用安全手册

使用须知

欢迎使用惠普网络产品，为了您及仪器的安全，请注意如下事项

1. 仪器要和地线相接。要使用有正确接地插头的电源线，使用中国国家规定的220V电源。
2. 避免高湿度和灰尘多的地方，否则易引起仪器内部部件的损坏。
3. 避免接近高温，避免接近直接热源，如直射太阳光、暖气等其它发热体。
4. 不得有异物或液体落入机内，以免部件短路。
5. 不要将强磁体放置于仪器附近。

警告

为了防止火灾或触电事故，请不要将该机放置于淋雨或潮湿处。

安装

安装辅助管理模块请参看安装指南。

保修及技术支持

如果您按以上步骤正确使用但遇到了问题，或想了解其它产品性能，请按以下方式与我们联络。

如果是硬件故障:

1. 与售出单位或当地维修机构联系。
2. 惠普维修中心:
   北京市海淀区知春路56号　中航科技大厦
   邮政编码:　100086
   电话:　010-62625666　转　6101

如果是软件问题:

1. 惠普技术支持中心热线电话:　010-62625666 转 5600 至5610
2. 传真自动回复系统:　010-65055280

Safety Information (Japanese)

安全性の考慮

安全記号



マニュアル参照記号。製品にこの記号がついている場合はマニュアルを参照し、注意事項等をご確認ください。

WARNING　マニュアル中の「WARNING」は人身事故の原因となる危険を示します。

CAUTION　マニュアル中の「CAUTION」は装置破損の原因となる危険を示します。

「WARNING」や「CAUTION」の項は飛ばさないで必ずお読みください。危険性に関する記載事項をよく読み、正しい手順に従った上で次の事項に進んでください。

これは安全性クラス I の製品で保護用接地端子を備えています。主電源から製品の入力配線端子、電源コード、または添付の電源コード・セットまでの間、切れ目のない安全接地が存在することが必要です。もしこの保護回路が損なわれたことが推測されるときは、接地が修復されるまで電源コードを外しておいてください。

LAN ケーブルの接地に関して:

- もし貴社の LAN が複数の配電システムにより電力を受けている領域をカバーしている場合には、それらのシステムの安全接地が確実に相互に結合されていることを確認してください。
- LAN ケーブルは時として危険な過度電圧（例えば雷や、配電設備の電力網での障害）にさらされることがあります。露出した金属部分の取扱いには十分な注意をはらってください。

本製品の内部にはユーザーが修理できる部品はありません。サービス、調整、保守および修理はサービス訓練を受けた専門家におまかせください。

本製品には電源スイッチがありません。電源コードを接続したとき電源入となります。

Regulatory Statements

FCC Class A Statement (for U.S.A. Only)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. Operation of this equipment in a residential area may cause interference in which case the user will be required to correct the interference at his own expense.

FCC Class B Statement (for U.S.A. Only) when using shielded cables:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Japan

VCCI Class A (For Japan Only)

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI Class B (For Japan Only)

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

Canada

This product complies with Class A Canadian EMC requirements when using unshielded cables and Class B EMC requirements when using shielded cables.

Korea

The top statement is for Class A products. The bottom statement is for Class B products.

사용자 안내문 (A급 기기)

이 기기는 업무용으로 전자파장해검정를 받은
기기이오니, 만약 잘못 구입하셨을 때에는 구입
한 곳에서 비업무용으로 교환하시기 바랍니다.

사용자 안내문 (B급 기기)

이 기기는 비업무용으로 전자파장해검정을 받은
기기로서, 주거지역에서는 물론 모든 지역에서
사용할 수 있습니다.

European Community

This equipment complies with ISO/IEC Guide 22 and EN55022 Class A with unshielded cables and EN55022. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Taiwan

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Australia/New Zealand

This product complies with Australia/New Zealand EMC Class A requirements.

Declaration of Conformity

The following Declaration of Conformity for the HP J4090A ProCurve 10Base-T Hub 8 complies with ISO/IEC Guide 22 and EN 45014. The declaration identifies the product, the manufacturer's name and address, and the specifications that are recognized in the European community

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN45014

Manufacturer's Name: Hewlett-Packard Company

Manufacturer's Address: 8000 Foothills Blvd.
Roseville, CA 95747-5502
U.S.A.

declares that the product:

Product Name: HP ProCurve 10Base-T Hub-8

Model Number: HP J4090A

conforms to the following Product Specifications:

Safety: EN60950 (1992)+A1,A2 / IEC 950:1991+A1,A2

EMC: EN 55022 (1994) / CISPR-22 (1993) class A
EN 55022 (1994) / CISPR-22 (1993) class B*
EN50082-1 (1992)
IEC 1000-4-2 (1995), 4 kV CD, 8 kV AD
IEC 1000-4-3 (1995), 3 V/m
IEC 1000-4-4 (1995): 1 kV-(power line)
0.5 kV-(signal line)
ENV 50141 (1993), 3Vrms

Supplementary Information:

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and carries the CE marking accordingly. LEDs in this product(s) are Class-1 in accordance with EN60825-1:1994.

Tested with Hewlett-Packard Co. products only.

*This product has been tested to and passes Class B when shielded network cables are used.

Roseville, April 1, 1998

Karen Dorchak, Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department TRE, Herrenberger Strasse 130, D-71034 Böblingen(FAX:+49-7031-14-3143).

Glossary

10Base-T

IEEE's specifications for 10 Mbit/s Ethernet using twisted-pair cable (100Ω STP or UTP). The maximum length of cable for a hub to end-node connection is 100 meters.

Collision

A condition in which two packets transmitted over a medium interfere with each other. Their interference makes both unintelligible.

Configuration

The way to set up a computer, server, or local area network.

Connection

A logical binding between two or more users of an interconnection service.

Cascade Port

An MDI RJ-45 port used to cascade compatible devices in a cascade configuration using straight-through twisted-pair cable. To cascade two devices, either run a connection from the cascade port on one device to an MDI-X port on the other device, or cascade the two devices by running crossover cable between similar port types on both devices.

IEEE 802.3 Standard

Standard for the physical and electrical connections in local area networks developed by the IEEE. The IEEE 802.3u standard covers these same issues for 100 Mbit/s networks.

LED

Light emitting diode on the front panel of the hub used for monitoring a hub or network condition. An LED display corresponds to a hub condition.

Local Area Network (LAN)

A group of interconnected computers and support devices.

MDI Port (Medium Dependent Interface)

MDI is the IEEE standard for the twisted-pair interface. This RJ-45 port can be used with straight-through cable to connect the hub to a network interconnection device, such as another hub or a switch. Pin-out assignments are shown in Appendix B.

MDI-X Port (Medium Dependent Interface - Crossed)

This RJ-45 port, which crosses the receive and transmit signals internally, can be used with straight-through cable to connect the hub to any device that has a standard network interface (e.g., workstation, server, bridge or router). Pin-out assignments are shown in Appendix B.

RJ-45 Connector

Most common terminator for twisted-pair wiring.

Shielded Twisted-Pair (STP)

Twisted-pair wire covered with an external aluminum-foil or woven-copper shield designed to reduce excessive noise pick up or radiation. The STP cable refered to in this manual is also sometimes called screened twisted-pair (ScTP). Its impedance is 100Ω and has the same pin assignment as UTP. This cable should not be confused with the older 150Ω cable type designed by IBM.

Star Topology

Physical connections for this hub are limited to a star configuration (i.e., similar to a hub and spoke arrangement). This topology also requires that only one path exists between any two nodes, and that data transmitted by any node is concurrently available to all other nodes within the same local network (i.e., immediate collision domain).

Unshielded Twisted-Pair (UTP)

Cable composed of two insulated wires twisted together to reduce electrical interference; used in common telephone cord.

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